Ultrasensor™

Configurable Material Sensor

ULTRA-U Series

Senix "Universal" Compact Sensors

Non-Contact Ultrasonic Air Distance Measurement

Ultrasensor's™ intelligent design makes it ideal for material sensing needs. One sensor gives you precise distance measurement and a variety of outputs. Connect with alarms, PLC's, motor drives, proportional air valves, computers, etc.

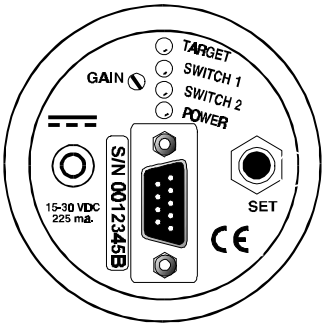
Multiple Outputs

All common outputs are included-proportional voltage 0-10 VDC and two 4-20 ma. current loops, two transistor switches and serial data. Use what you need. All outputs are affected by the sensor's measured distance, and you can adjust the outputs either by push-button or computer.

Button Configured

Install the sensor, attach your equipment via the rear connector and adjust the analog scaling and/or switch distances using only the rear SET push-button and simulated or actual targets. View material detection and setpoints on the rear indicators (see drawing below).

Ultrasensor™ automatically spans and polarizes the outputs without potentiometers, screwdrivers or test equipment!



PC Configured

For ultimate flexibility, temporarily connect Ultrasensor™ to any IBM-PC or compatible with our powerful SoftSpan™ programs and gain control over sensor operational parameters. Using a menu, set output values and conditions, setpoints, security options and much more. Adjust distance characteristics in your preferred units (inches, feet, meters, etc.), then disconnect and install Ultrasensor™ . The sensor permanently retains the new configuration!

Instant Duplication

Setups can also be stored to the PC's disk for future use. Instantly recall a setup for a previous application and create a duplicate in seconds! Now you can stock one part for many applications and configure it quickly!

Models

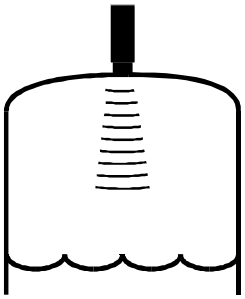
ULTRA-U
HIPS plastic
wt: 6 oz.
(shown with UA-CLIC bracket)

ULTRA-U-SS
Stainless steel
wt: 24 oz.
(shown with UA-MB-SS bracket)

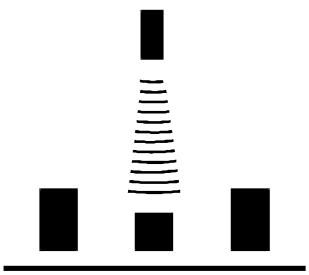
ULTRA-U-SS2
SS w/2" NPT male thread
wt: 26 oz.
(shown with UA-FM-SS)

All sensors ship with a snap bracket (UA-CLIC) and field cable. Other options are available including permanent mounting brackets, boots, flange mounts and displays.

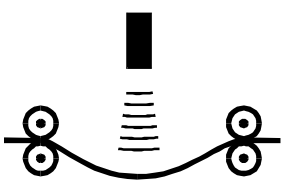
Level



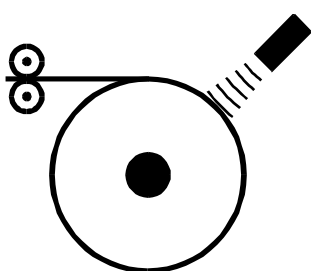
Dimension/Sort



Web/Loop Control



Roll Diameter



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Senix CORP

Setting New Dimensions

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Target Performance

Color/Transparency

Unaffected by object color, transparency or optical characteristics.

Orientation

Detects flat or curved objects. Surface should reflect back to sensor. Flat surfaces are best when perpendicular to reference axis, and may not be detected at higher angles of incidence.

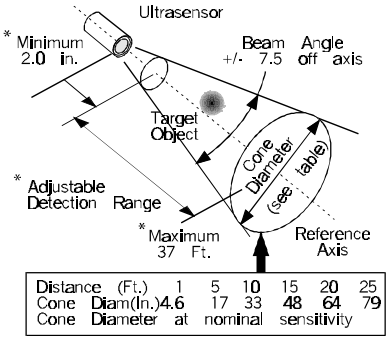
Density

Low density materials including some foams, cloths and powders may exhibit reduced detection range in some applications. Testing is recommended.

Typical Distances

Object	Max Range (ft.)
14 ga. solid wire	10
baseball	16
1 sq. in. plate	20
basketball	22
1 sq. ft. plate	30
Large surfaces or Liquid in standpipe	37

More distant objects should typically be larger. Consult Senix for assistance with special considerations or applications.

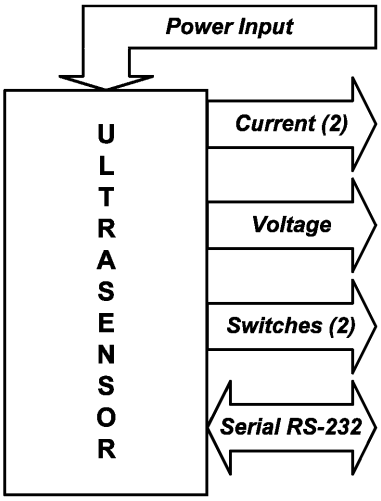


* The factory configured minimum range is 6.5 in. (165 mm). This can be reduced to 2 in. (51 mm) using SoftSpan™.

Specifications

Range	2 inches to 37 feet	**Beam Angle**	15 Degrees (nom) @ -3db conical
Temperature	0 to 70 degrees C	**Humidity**	5 to 95%, non-condensing
Case Material	HIPS Plastic or Stainless Steel	**Field Settings**	Permanently Stored
Sensitivity	Adjustable 3/4 turn potentiometer (rear accessible using screwdriver)		
Repeatability	Nominal 0.1% of range @ constant temp. Affected by target, distance, environment		
Update Rate	Adjustable, 120 Hz maximum, 20 Hz (nominal), adjust to distance & application		
Resolution	0.003384 in. (.086 mm) max.; Analogs 8 bits over spanned distance & full output range		
Dimensions	Plastic: 2.375 in. (60.33 mm) diam. X 5.5 in. (139.7 mm) long, adapts to 2" plastic pipe Stainless: 2.375 in. (58.74 mm) diameter x 5.5 in. (139.7 mm) long		

Interfaces



- 10-30 VDC @ 180 ma. (nominal), polarity protected
- Powered via rear connector (DB9F) or 3.5 mm rear jack
- Min 13.5 v in for 10 VDC out, min 15 v in for current sourcing (#1)

- #1: 4-20 ma. current loop, current sourcing
- #2: 4-20 ma. current loop, current sinking, externally sourced
- Custom output currents (endpoints) in the range of 0 to 20 ma.
- Endpoint distances pushbutton or SoftSpan adjustable

- Standard output voltages 0-10, 0-5 or 1-5 VDC selectable
- Custom output voltages (endpoints) in the range of 0 to 10 VDC
- Endpoint distances pushbutton or SoftSpan adjustable

- Two (2) switch outputs, each with rear status LED indicator
- Open collector NPN transistor, 40 VDC max, 200 ma. continuous
- Push-button or SoftSpan adjustable switching distances (setpoints)
- Switch polarity can be set for each switch to simplify interface

- Serial data communications to any receiving or controlling device
- 9600 baud, 8 data bits, 2 stop bits, no parity, 3-wire (Tx, Rx, Gnd)
- Free running or polled (externally requested) data outputs

Functional

Target Window	Targets can be range discriminated to ignore unwanted objects or increase focus
Output Modes	All Outputs: Free running or polled (RS-232 request by external controller)
PC Configuration	Connects to COM port using SoftSpan™ software kit
Output Polarity	Analogs can increase or decrease with distance. Switches on or off @ setpoints
Output Filtering	All outputs can be averaged from 2 to 255 measurements
Status Indicators	Four (4) rear LED's indicate target echo, switch 1, switch 2 and power status

Components

- Each sensor is shipped with a 6-ft. cable with tinned leads, UA-CLIC bracket and instructions
- SoftSpanä kit available for configuration using IBM-PC includes power supply and computer cable
- Other options are available. Contact Senix to discuss your specific needs or for application assistance

This product is not recommended for applications involving personal safety or for use with hazardous or explosive materials.